

# **Darwin and Evolution**

Charles Darwin

1. A naturalist – someone who studies nature
2. Made observations of finches on The Galapagos Islands and Ecuador.
3. Observed differences in the finches in the two places, even though they were the same species

Some finches had:

A wide beak- to crack open big hard seeds

A tough beak- to eat bigger insects and cactus parts

A narrow beak- to catch smaller insects

4. After much research he decided that the finches might have developed characteristics based on their environment.

## Selective Breeding

1. Humans select which plants or animals to reproduce  
based on desired characteristics.
2. Traits- specific characteristics passed from  
parents to offspring through genes
3. Example- dogs used for hunting  
What characteristics would be desired for  
these dogs?

## **The Seven Groups in AKC All-Breed Shows**

**Sporting** – These dogs were bred to hunt game birds both on land and in the water. The breeds in this group include Pointers, Retrievers, Setters and Spaniels.

**Hound** – These breeds were bred for hunting game by sight or scent. These breeds include Beagles, Bassets, Dachshunds and Greyhounds.

**Working** – These dogs were bred to pull carts, guard property, and perform search and rescue services. Among the breeds in this group are the Akita, Boxer, Doberman Pinscher and St. Bernard.

**Terrier** – This group includes breeds such as the Airedale, Cairn and Scottish Terrier. Terriers were bred to rid property of vermin such as rats.

**Toy** – These dogs were bred to be household companions. This group includes little dogs such as the Chihuahua, Maltese, Pomeranian and Pug.

**Non-Sporting** – This diverse group includes the Chow Chow, Bulldog, Dalmatian and Poodle. These dogs vary in size and function, and many are considered companion dogs.

**Herding** - These dogs were bred to help shepherds and ranchers herd their livestock. The Briard, Collie, German Shepherd and Old English Sheepdog are some of the breeds in this group.

# Evidence for Darwin's Ideas

1. From other scientists Darwin picked up ideas that would support his theory of evolution.
2. Population Growth- a book noted that humans have the potential to reproduce rapidly and that the food supply eventually could not support them.  
(did not account for technology)

Darwin took from this:

- a. All organisms have the ability to produce many offspring
- b. Due to starvation, disease competition and predators not all organisms survive to reproduce
- c. There must be something special about those that survive

3. The age of the Earth- a book noted that the Earth formed over a long period of time

Darwin took from this:

The Earth was older than people thought

# Natural Selection

Theory of Evolution occurs in four parts

1. Overproduction- many born
2. Inherited Variation-  
every individual has its  
own traits- not identical  
to its parents
3. Struggle to survive- only  
some survive to  
adulthood
4. Successful reproduction-  
those that survive  
pass on their traits to their  
offspring who  
because of these trait,  
should survive as well.

## Problems For Darwin

1. Parts of his theories lacked evidence
2. He knew that organisms inherited traits, he just did not know how. He knew there is a great variation among organisms but he did not know how this variation occurs.
3. Today scientists have found the evidence that he lacked- they have found that it is all about an organism's genes. These genes are inherited from parents.